Claims

1. (Currently Amended) A flexible pipe configured to convey hydrocarbon fluids in subsea environments, the pipe comprising a tubular member formed of a plastic material, and a plurality of electrical current conductive materials dispersed in the plastic material for increasing the electrical conductivity of the tubular layer, wherein the electrical current conductive materials are carbon nanotubes.

2. (Currently Amended) The pipe of claim 1 further comprising an electrical conductor connected to two portions of the tubular layer so that when electrical power is supplied to the conductor, the current flows through the electrical current conductive materials to heat the pipe and the fluids.

3. (Currently Amended) The pipe of claim 2 wherein the electrical conductor is connected to ~~the~~ respective ends of the tubular member.

4. (Currently Amended) The pipe of claim 1 wherein the electrical conductivity of the electrical current conductive materials is greater than that of the plastic material.

5. (Original) The pipe of claim 1 further comprising an electrical power source connected to the electrical conductor, and wherein the amount of electrical power flowing from the power source, and through the conductor and the layer can be varied to control the temperature of the fluid.

6. (Canceled)

7. (Canceled)

8. (Currently Amended) The pipe of claim ~~7~~ 1 wherein the nanotubes are a convex cage of atoms with only hexagonal and/or pentagonal faces.

9. (Currently Amended) The pipe of claim ~~7~~ 1 wherein each nanotube has a single wall with a diameter in the range of 1.2-1.4 nm.

10. (Currently Amended) The pipe of claim ~~7~~ 1 wherein each nanotube has multiple walls.

11. (Currently Amended) The pipe of claim ~~7~~ 1 wherein the nanotubes have a length-to-diameter ratio that is greater than 800.

12. (Currently Amended) The pipe of claim ~~7~~ 1 wherein the density of the nanotubes in the layer is less than the density of metal that would have to be dispersed in the layer to achieve the same electrical conductivity.

13. (Currently Amended) The pipe of claim ~~7~~ 1 wherein the percolation threshold for the nanotubes is less than one half of one percent by volume.

14. (Currently Amended) The pipe of claim ~~7~~ 1 wherein the density of the nanotubes in the layer is less than the density of metal that would have to be dispersed in the layer to achieve the same electrical conductivity.

15. (Original) The pipe of claim 1 further comprising a tubular plastic layer, which is surrounded by the tubular member.

16. (Original) The pipe of claim 1 further comprising a tubular plastic layer surrounding the tubular member.

17. (Original) The pipe of claim 1 further comprising a tubular armor layer, which is surrounded by the tubular member.

18. (Original) The pipe of claim 1 further comprising a tubular armor layer surrounding the tubular member.

19. (Original) The pipe of claim 1 further comprising a tubular carcass layer which is surrounded by the tubular member.

20. (Original) The pipe of claim 19 further comprising a plastic tubular layer extending between the tubular member and the carcass layer.

21. (Currently Amended) A method of manufacturing a flexible pipe configured to convey hydrocarbon fluids in subsea environments, the method comprising forming the pipe, at least in part, with a tubular member formed of a plastic material, a plurality of electrical current conductive materials being dispersed in the plastic material for increasing the electrical conductivity of the tubular layer, wherein the electrical current conductive materials are carbon nanotubes.

22. (Currently Amended) The method of claim 21 further comprising electrically connecting an electrical conductor to the tubular member so that when electrical power is supplied to the conductor, the current flows through the electrical current conductive materials to heat the pipe and the fluids.

23. (Currently Amended) The method of claim 22 further comprising connecting the electrical conductor to ~~the~~ respective ends of the tubular member.

24. (Currently Amended) The method of claim 21 wherein the electrical conductivity of the electrical current conductive materials is greater than that of the plastic material.

25. (Previously Presented) The method of claim 22 further comprising connecting an electrical power source to the electrical conductor, and varying the amount of electrical power flowing from the power source, and through the conductor and the layer to control the temperature of the fluid.

26. (Canceled)

27. (Canceled)

28. (Currently Amended) The method of claim ~~27~~ 21 wherein the nanotubes are a convex cage of atoms with only hexagonal and/or pentagonal faces.

29. (Currently Amended) The ~~pipe~~ method of claim ~~27~~ 21 wherein each nanotube has a single wall with a diameter in the range of 1.2-1.4 nm.

30. (Currently Amended) The ~~pipe~~ method of claim ~~27~~ 21 wherein each nanotube has multiple walls.

31. (Currently Amended) The method of claim ~~27~~ 21 wherein the nanotubes have a length-to-diameter ratio that is greater than 800.

32. (Currently Amended) The method of claim ~~27~~ 21 wherein the density of the nanotubes in the layer is less than the density of metal that would have to be dispersed in the layer to achieve the same electrical conductivity.

33. (Currently Amended) The method of claim ~~27~~ 21 wherein the percolation threshold for the nanotubes is less than one half of one percent of volume.

34. (Currently Amended) The method of claim ~~27~~ 21 wherein the density of the nanotubes in the layer is less than the density of metal that would have to be dispersed in the layer to achieve the same electrical conductivity.

35. (Original) The method of claim 21 further comprising providing a tubular plastic layer, which is surrounded by the tubular member.

36. (Original) The method of claim 21 further comprising surrounding the tubular member with a tubular plastic layer surrounding the tubular member.

37. (Currently Amended) The method of claim 21 further comprising providing a tubular armor layer, which is surrounded by the tubular member.

38. (Original) The method of claim 21 further comprising surrounding the tubular member with a tubular armor layer.

39. (Original) The method of claim 21 further comprising providing a tubular carcass layer, which is surrounded by the tubular member.

40. (Original) The method of claim 39 further comprising providing a plastic tubular layer between the tubular member and the carcass layer.